BookletChart

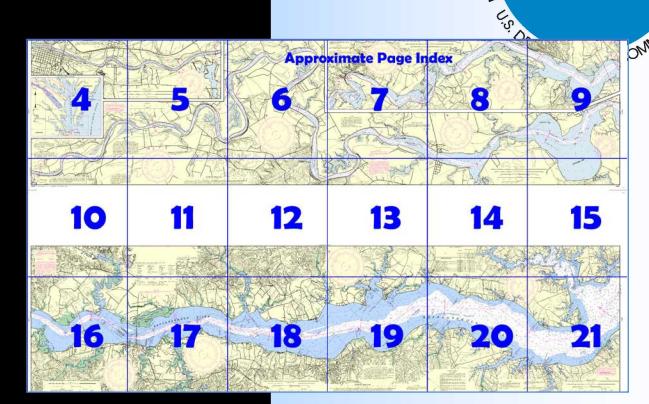
Rappahannock River - Corrotoman River to Fredericksburg VA

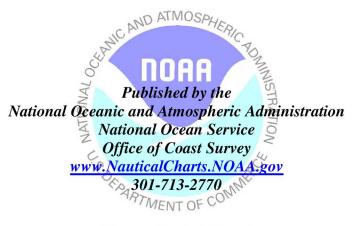
(NOAA Chart 12237)



A reduced scale NOAA nautical chart for small boaters. When possible, use the full size NOAA chart for navigation.

- ☑ Complete, reduced scale nautical chart
- ✓ Print at home for free
- ✓ Convenient size
- ☑ Up to date with all Notices to Mariners
- ☑ United States Coast Pilot excerpts
- ✓ Compiled by NOAA, the nation's chartmaker.





What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart[™]?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at http://www.NauticalCharts.NOAA.gov.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.



[Coast Pilot 3, Chapter 11 excerpts]

- (111) **Rappahannock River** has depths of 15 feet to the bridge at Tappahannock; a channel 12 feet deep to Fredericksburg; 8½ feet from the bridge at Tappahannock to Port Royal, 9 feet to the Fredericksburg Bar, 6½ feet to Steamboat Wharf and 4 feet to the Standard Oil Wharf at Fredericksburg.
- (112) vessels anchor near the channel the bottom is soft. Carter and Urbanna Creeks are used by small craft.

(115) The **currents** follow the channel. The

velocities are weak, averaging less than 1 knot at the entrance to 1.4 knots at Tappahannock.

- (118) places for supplies are Broad Creek, Carter Creek, and Urbanna Creek
- (121) Depths of 10 feet can be carried across Rappahannock Spit; 0.4 mile outside the light, a buoyed lane extends through the fishtraps for

lightdraft vessels.

- (123) **Broad Creek**. A dredged channel marked by lights and daybeacon, leads from Rappahannock River to depths of 7 to 5 feet inside; the entrance channel had a depth of 5.3 feet. gasoline, diesel fuel, water, ice, a sewage pump-out station, and marine supplies are available.
- (125) **Locklies Creek** has depths of 5 feet through a marked entrance decreasing to 2 feet inside. Some marine supplies, gasoline, a sewage pump-out station, and berths are available.
- (130) depths of the channels in Carter Creek are 15 feet in the entrance, 12 feet in Eastern Branch to the wharves at Irvington, and 9 feet in **Carter Cove.** The entrance is marked by lights and daybeacons.
- (132) **Corrotoman River** has depths of 14 feet to the junction of Eastern and Western Branches. The channel is obstructed by shoal spits and middle grounds.
- (133) Whitehouse Creek has depths of 7 feet to Bertrand. Town Creek has depths of 2 to 4 feet. Gasoline is available near the head. Taylor Creek has depths of 2 to 5 feet in the entrance and 4 to 8 feet inside.
- (134) **Eastern Branch** has depths of 13 feet for 1.4 miles, thence 8 feet for 1.5 miles. **Western Branch** has depths of 12 feet for 2.5 miles, thence 5 feet for 2 miles.
- (135) A cable ferry crosses Western Branch from **Ottoman Wharf** to **Merry Point**. **DO NOT ATTEMPT TO PASS A MOVING CABLE FERRY**.
- (138) A channel leads from Rappahannock River to a basin and wharves below the bridge; the depths were 5.8 feet in the channel (7.5 feet at midchannel) and 7.8 to 8.3 feet in the basin. Above this point, depths of 6 feet for about 0.7 mile. The marked entrance is protected by a riprap jetty on the north.
- (139) Urbanna. Marine supplies, fuel, pump-out station, and berths are available.
- (140) A "no wake" **speed limit** is in effect in Urbanna Creek.
- (142) **Lagrange Creek** has depths of 7 feet in the marked entrance and 4 feet to a boatyard. Gasoline and supplies are obtainable. The wharf has depths of 4 feet.
- (143) **Greenvale Creek**. A dredged channel, marked by a light and daybeacons, leads to a landing; the midchannel depth was 6.7 feet from the entrance to Daybeacon 14; 5 feet to the landing. Gasoline and supplies are available.
- (145) **Deep Creek** has depths of 2 feet across the flats at the entrance and 3 to 5 feet in the branches. Gasoline is available at an oysterhouse at **Boer**.
- (146) **Mulberry Creek** had depths of 4 feet in the dredged cut at the entrance and for 1 mile upstream. A light marks the west side of the entrance. Gasoline and supplies are obtainable at **Morattico**.
- (147) **Lancaster Creek** has depths of 5 feet in the marked entrance, and from 4 to 2 feet for 4 miles to **Woodhouse Landing**. A marina on the west side has 3 feet in its basin; supplies are available.
- (150) A small-boat harbor is at **Wildwood Beach**. The entrance is protected on the north by a jetty, and on the south by a point of land. A light is off the jetty; the depth was 4½ feet. Gasoline, diesel fuel, water, ice, marine supplies.
- (152) **Totuskey Creek** is entered by a marked channel to a turning basin below the Totuskey Bridge; the channel had a depth of 5 feet from the entrance to the Bridge, thence 3 feet. A timber-and-bush dike on the northeast side is barely visible. **Totuskey Bridge** is a span with a clearance of 10 feet
- (154) **Piscataway Creek** has depths of 4 feet in the entrance with greater depths for 5 miles upstream.
- (155) **Hoskins Creek**. A marked dredged channel extends from the entrance to a turning basin 0.4 mile above the mouth, thence to the highway bridge; the depth was 3.6 feet (5.7 feet at midchannel) in the entrance channel to the mouth of the creek; 6.4 feet (9.0 feet at midchannel) to the turning basin; 2.1 to 10.0 feet in the basin; 5.7 feet (9.0 feet at midchannel) to the highway bridge. The bridge has a clearance of 8 feet. A "no wake" **speed limit** is enforced

Table of Selected Chart Notes

HEIGHTS

Heights in feet above Mean High Water



Courses are TRUE and must be CORRECTED for any variation and compass deviation.

DISTANCES

DISTANCES

Mileage distances from the mouth of the Rhappahannock River, between Stingray Point and Windmill Point are in International Nautical Miles, and are indicated thus:

Courses are TRUE and must be CORRECTED for any variation and compass deviation.

All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

CAUTION

Small craft should stay clear of large com-mercial and government vessels even if small craft have the right-of-way.

CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CALITION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

CAUTION

Small craft should stay clear of large com-mercial and government vessels even if small craft have the right-of-way.

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION

Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:



All craft should avoid areas where the skin divers flag, a red square with a diagonal white stripe, is displayed.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

POLLUTION REPORTS

REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility it felephone communication is impossible (33 CFR 153).

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:

Pipeline Area Cable Area

Additional uncharted submarine pipelines and become exposed. Manners should use exterior caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted hypos.

unlighted buoys. 1 1 1

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

Cable across the river may be at or near the water surface. Mariners should exercise caution when navigating in this area.

CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Imagery and Mapping Agency Publication 117. Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

should be used with caution.

Station positions are shown thus:

(Accurate location) o(Approximate location)

Corrected through NM Sep. 20/03, LNM Sep. 2/03

Corrected through NM Sep. 20/03, LNM Sep. 2/03

Corrected through NM Sep. 20/03, LNM Sep. 2/03 HORIZONTAL DATUM

THO HIZDNIAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.427 monthward and 1.115 eastward. average of 0.477" northward and 1.115" eastward to agree with this chart.

CAUTION (WARNINGS CONCERNING LARGE VESSELS

WARNINGS CONCERNING LARGE VESSELS

The 'Rules of the Road' state that recreational boats shall not impede the passage of a vessel that can navigate only within a narrow channel or fairway. Large vessels may appear to move slowly due to their large size but actually transit at speeds in excess of 12 knots, requiring a great distance in which to maneuver or stop. A large vessel's superstructure may block the wind with the result that sailboats and sailboards may unexpectedly find themselves unable to meneuver. Bow and stem waves can be hazardous to small vessels. Large vessels may not be able to see small craft close to their bows.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 3 for important supplemental information.

ABBREVIATIONS

(For complete list of Symbols and Abbreviations, see Chart No. 1)

RULES OF THE ROAD (ABRIDGED)

Motorless craft have the right-of-way in almost all cases. Sailing vessels and motorboats less than sixty-five feet in length shall not hamper, in a narrow channel, the safe passage of a vessel which can navigate only inside that

channel.

A motorboat being overtaken has the right-of-way.

Motorboats approaching head to head or nearly so should pass port to port.

When motorboats approach each other at right angles or obliquely, the boat on the right has the right-of-way in most

cases.

Motorboats must keep to the right in narrow channels when safe and practicable.

sale and practicable.

Mariners are urged to become familiar with the complete text of the Rules of the Road in U.S. Coast Guard publication "Navigation Rules."

Additional information can be obtained at nauticalcharts.noaa.gov.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

CAUTION

FISH TRAP AREAS AND STRUCTURES

HIGH THAP AREAS AND STRUCTURES

Mariners are warned that numerous uncharted duck blinds and fishing structures, some submerged, may exist in the fish trap areas. Such structures are not charted unless known to be permanent.

Regulations to assure clear passage to and through dredged and natural channels, and to established landings, are prescribed by the Corps of Engineers in the Code of Federal Regulations.

Definite funity of fight trea green being been established in some

Definite limits of fish trap areas have been established in some areas, and those limits are shown thus: Where definite limits have not been prescribed, the location of fishing structures is restricted only by the regulations.

FACILITIES

Locations of public marine facilities are shown by large magenta numbers with leaders and refer to the facility tabulation.

PUBLIC BOATING INSTRUCTION PROGRAMS

The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary (USCGAUN), national organizations of boatmen, conduct extensive boating instruction programs in communities throughout the United States, For information regarding these educational courses, contact the following sources: USPS - Local Squadron Commander or USPS Headquarters, Post Office Box 30423, Raleigh, N.C. 27612, 919-821-0281.

USCGAUX-5th Coast Guard District, Federal Building, 431 Crawford St Portsmouth, VA 23704-5004, Tel. 804-398-6208 or USCG Headquarters (G-BAU), Washington, D.C. 20593-0001. This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

TIDAL CURRENT DATA MAXIMUM CURRENTS POSITION Flood Ebb PLACE Direc-tion (true) age veloc ity Long BAPPAHANNOCK BIVER deg. knots deg. knots Towles Point - 37"38"N 76"30"W 274 37"40"N 76"33"W 0 37"45"N 76"36"W 340 37"46"N 76"39"W 300 37"48"N 76"42"W 315 37"48"N 76"42"W 315 37"53"N 76"47"W 315 37"53"N 76"47"W 315 37"55"N 76"49"W 315 37"56"N 76"51"W 315 38"10"N 77"11"W 310 37°38'N 76°30'W 274 0.5 0.6 0.6 0.7 0.9 0.8 Towles Point Rogue Point, 0.8 mile WNW. of Waterview, 1.3 miles NNE. of Tarpley Point, 1.5 miles south of Jones Point, 1.4 miles NNW. of Sharps, 1.2 miles south of Bowlers Rock, 0.2 mile north of Accaceek Point, 0.3 mile SW. of Tarpenbargeric Ridden I. poiles St. 95 135 150 Tappahannock Bridge, 1.8 miles SE. of ---105 135 1.3 Tappahannock Bridge -Port Royal ----2-(803) 11211 1 CIL

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MARINE WEATHER FORECAST	·s	
NATIONAL WEATHER SERVICE	TELEPHONE NUMBERS	OFFICE HOURS
Baltimore, MD / Washington, DC Wakefield, VA Newport, NC	*(703) 260-0107 *(757) 899-4200 *(252) 223-5737	24 hours daily 24 hours daily 24 hours daily

Recorded

NOAA WEATHER RADIO BROADCASTS

CITY	STATION	FREQ.	BROADCAST TIMES
Manassas, Va.	KHB-36	162.55 MHz	24 hours daily
Salisbury, Md.	KEC-92	162.475 MHz	24 hours daily
Norfolk, Va.	KHB-37	162.55 MHz	24 hours daily
Heathsville Va	WXM-57	162 40 MHz	24 hours daily

BROADCASTS OF MARINE WEATHER FORECASTS AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS

CITY STATION FREQ. BROADCAST TIMES-EST SPECIAL WARNING

* Recorded

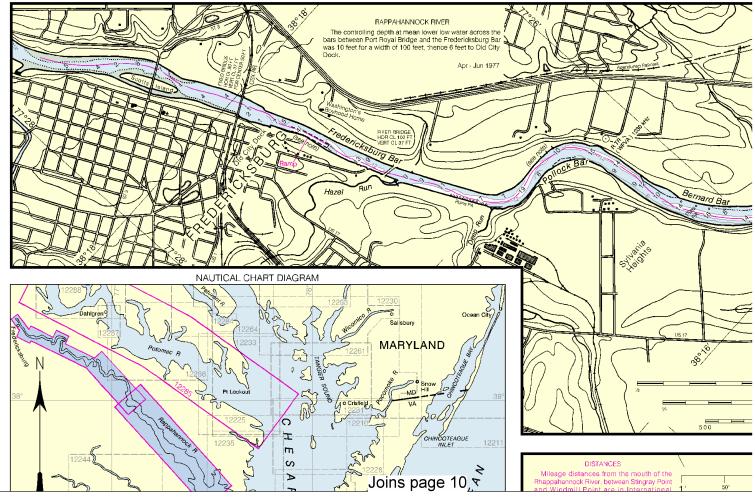
Hampton Roads, Va. NMN-80 8:33 AM & 9:03 PM Distress calls for small craft are made on 2182 kHz or channel 16 (156.80 MHz) VHF.

PRINT-ON-DEMAND CHARTS

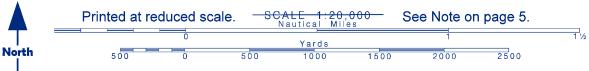
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16	GREENVALE CREEK MAR	8	5	BME	S	HMB	45	18			F	T\$LP	WD	С	W	Ğ	BT	
21	GARRETT'S MARINA	5	5	BE	S	НМ		15	М		F	TS P	D	С	W	Η	Б	G
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23	JUNE PARKER MARINA	4	4		s	М		-6			FL	TS	WD	С	WI	G	ВТ	DG

THE LOCATIONS OF THE ABOVE PUBLIC MARINE FACILITIES ARE SHOWN ON THE CHART BY LARGE MAGRITA NUMBERS.
THE TABULATED "PAPROACH-PETIREPORTED" IS THE DEPTH AVAILABLE FROM THE NEAREST NATURAL OR DREDGED CHANNEL TO THE FACILITY.
THE TABULATED "PURPOUT STATION" IS DEPINED AS FACILITIES AVAILABLE FOR PURPING OUT BOAT HOLDING TAINS.







HAMPTON ROADS (Sewells Pt.), VA.
Predicted times are beightes of high and low vester-Seatern Standard Time. For Depitich Seving time, and I hour.
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	To predict local tide, apply the time difference listed in the facility tabulations to these tide pradictions.														
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1 0506 F 1111 1720 2328	0.0 2.7 0.1 2.6	16 0538 Sa 1150 1808	0.2 2.7 0.4	I 0805 M 1228 1854	0.1 3.2 0.3	16 0008 Tu 0510 1229 1902	2.4 0.6 2.7 0.8	# 0638 1310 1942	2.6 0.2 3.2 0.4	16 D014 Th 0614 1237 1917	2.2 0.7 2.7 0.8	1 0229 Se 0836 1508 2132	2.4 0.4 2.8 0.4	18 0129 Su 0730 1351 2030	2.1 0.6 2.5 0.5
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9 0517 F 1120 1738	2.3 0.1 3.1	23 0519 So 1117 1751	2.1 0.6 2.7	8 0104 M 0706 1312 1937	0.3 2.7 0.2 3.1	23 0032 Tu 0631 1237 1855	0.5 2.6 0.4 3.0	8 0122 W 0734 1347 1957	0.3 2.9 0.3 2.9	23 0036 Th 0649 1305 1911	0.1 3.1 0.1 2.9	8 0203 Se 0823 1447 2043	0.2 2.9 0.2 2.5	23 0139 Su 0804 1431 2026	-0.3 3.4 -0.3 2.6
9 002/ Sa 0820 1222 1857	0.2 2.4 0.1 3.1	24 0024 Su 0614 1212 1841	0.6 2.2 0.5 2.8	9 0150 Tu 0754 1402 2022	0.2 2.8 0.2 3.1	24 0115 W 0719 1328 1941	0.3 2.9 0.2 3.1	9 0200 Th 0813 1429 2036	0.2 3.0 0.3 2.8	24 0121 F 0737 1357 1959	0.0 3.3 0.0 3.0	9 0236 Su 0858 1524 2118	0.2 2.9 0.2 2.4	24 0229 M 0856 1524 2118	-0.4 3.5 -0.3 2.6
10 0122 5u 0717 1320 1951	0.2 2.5 0.0 3.2	25 0110 H 0703 1303 1927	0.5 2.4 0.4 2.9	10 0232 W 0838 1448 2103	0.2 2.9 0.2 3.0	25 0157 Th 0805 1418 2027	D. I 3. I D. I 3. I	10 0236 F 0850 1509 2112	0.2 3.1 0.3 2.8	25 0207 Se 0825 1448 2048	-0.1 3.5 -0.1 2.9	10 0314 M 0933 1602 2153	0.2 2.9 0.3 2.3	25 0320 Tu 0949 1517 2216	-0.4 3.4 -0.3 2.6
11 0212 M 0810 1414 2041	0.1 2.6 0.0 3.2	26 0153 Tu 0749 1351 2611	0.3 2.6 0.2 3.0	11 0310 Th 0918 1532 2141	0.2 3.0 0.2 2.9	26 0239 F 0850 1507 2112	0.0 3.3 0.0 3.1	11 0311 Se 0926 1548 2147	0.3 3.1 0.3 2.7	25 0253 Su 0914 1540 2136	-0.2 3.6 -0.1 2.9	11 0349 Tu 1009 1640 2229	0.3 2.8 0.4 2.3	28 0413 W 1043 1711 2304	-0.3 3.3 -0.2 2.5
12 0258 Tu 0859 1505 2127	0.1 2.7 0.0 3.1	27 0234 W 0834 I 439 2054	0.2 2.8 0.1 3.1	12 0346 F 0956 1613 2218	0.2 3.0 0.3 2.8	27 0322 Sa 0937 1557 2158	-D.1 3.4 0.0 3.0	12 0345 Su 1000 1626 2221	0.3 3.0 0.4 2.6	27 0340 M 1005 1632 2227	-0.2 3.6 -0.1 2.8	12 0425 W 1045 1719 2305	0.3 2.8 0.4 2.2	27 0508 Th: 1139 1806	-0.2 3.1 -0.1
13 0341 # 0944 1532 2210	0.0 2.7 0.1 3.0	28 0314 Th 0917 1526 2137	0.1 2.9 0.1 3.1	13 0422 Sa 1033 1653 2254	0.3 3.0 0.4 2.7	28 0408 Su 1025 1648 2246	-0.1 3.5 0.0 2.0	13 D419 M 1038 1704 2256	0.4 3.0 0.5 2.4	28 0450 Tu 1059 1726 2320	-0.1 3.5 0.0 2.6	13 0503 Th 1124 1901 2348	0.4 2.7 0.5 2.1	28 0002 F 0807 1237 1903	2.4 0.0 2.9 0.1
14 0422 Th 1027 1638 2251	0.1 2.8 0.2 2.8	29 0354 F 1002 1514 2221	0.0 3.1 0.1 3.9	14 0456 Su 1110 1734 2330	0.4 2.9 0.5 2.5	29 0452 M 1115 1742 2337	D.D 3.5 C.I 2.0	14 0455 Tu 1112 1744 2333	0.5 2.9 0.6 2.3	29 0524 W 1154 1824	0.0 3.3 0.2	14 0545 F 1207 IB47	0.5 2.6 0.5	29 0103 Se 0709 1337 2000	2.3 0.1 2.7 0.1
15 0500 F 1109 1723 2331	0.1 2.8 0.3 2.7	30 0435 Sa 1048 1704 2307	0.0 3.2 0.1 2.9	15 0532 M 1148 1616	0.5 2.8 0.7	30 0342 Tu 1210 1839	0.1 3.4 0.3	15 0332 W 1152 1828	0.6 2.6 0.7	30 0017 Th 0622 1253 1925	2.5 0.2 3.1 0.3	15 0035 \$e 0634 1256 1937	2.1 0.5 2.5 0.5	30 0207 Su 0815 1439 2057	2.3 0.3 2.5 0.2
		31 0519 Su 1136 1757 2355	0.0 3.2 0.2 2.0							31 0121 F 0726 1400 2029	2,4 0.3 2.9 0.4				

DECEM	3ER 2003	JANUARY 2004
Time H	. Time Ht.	Time Ht. Time Hi.
h.m. f	. h.m. ft.	h.m. ft. h.m. fi.
I D311 2.: M 0923 0.: I539 2.: 2151 0.:	Tu C806 0.3 1415 2.3 2042 0.1	I 0422 2.3 I6 0328 2.5 Th 1048 0.3 F 0528 0.1 1548 1.9 I548 2.0 2240 0.1 2157 -0.2
2 0412 2. Tu 1027 0.: 1836 2.: 2242 0.:		2 0515 2.3 17 0422 2.6 F 1142 0.3 Ss 1104 0.0 F 1733 1.6 1653 2.0 2328 0.1 2301 -0.2
3 0507 2. W 1125 0.1 1720 2.1 2328 0.1	Th 1020 0.1 1617 2.2 2231 -0.1	3 0604 2.4 18 0528 2.7 So 1232 0.2 Su 1209 -0.1 1021 1.9 1750 2.0
4 0555 2.1 Th 1218 0.1 1815 2.1	19 C457 2.7 F 1124 0.0 1718 2.2 2327 -0.3	4 0015 0.0 19 0003 -0.3 9u 0650 2.4 M 0641 2.9 1317 0.2 1309 -0.2 1906 1.9 1900 9.1
5 0011 0. F 0639 2.1 1302 0.1 1858 2.1	20 C556 2.9 Se 1224 -0.2 1817 2.3	5 0100 0.0 20 0104 -0.4 N 0733 2.5 TU 0739 3.0 1400 0.1 1948 1.9 1957 2.2
6 0052 0. Se 0719 2. 1344 0. 1938 2.		6 0143 -0.1 21 0201 -0.5 Tu 0614 2.5 W 0624 3.0 1441 0.0 1456 -0.4 2029 2.0 2051 2.3
7 0132 0.1 Su 0758 2.1 1424 0. 2016 2.1	22 C117 -0.5 M C749 3.2 1417 -0.4 2009 2.4	7 0225 -0.1 22 0256 -0.5 w 0852 2.6 Th 0925 3.0 1520 0.0 2142 2.4
8 0210 0.1 M 0838 2.1 1503 0. 2054 2.	23 C212 -0.5 Tu C843 3.2 1510 -0.4 2102 2.4	8 0305 -0.1 23 0348 -0.6 Th 0930 2.6 F1013 2.9 1557 0.0 1630 -0.4 2147 2.0 2221 2.4
9 0248 0.1 Tu 0912 2.1 1542 0. 2131 2.	24 C306 -0.5 W C936 3.2 1601 -0.4 2155 2.4	9 0344 -0.1 24 0439 -0.4 F 1006 2.6 Sa 1100 2.6 1834 -0.1 1714 -0.3 2225 2.1 2318 2.4
10 0325 0. W 0849 2. 1620 0. 2208 2.	25 C400 -0.5 Th 1029 3.1 1652 -0.3 2249 2.4	10 0425 -0.1 25 0529 -0.3 Se 1043 2.5 Su 1145 2.6 1710 -0.1 1757 -0.3 2305 2.1
11 0404 0. Th 1026 2.1 1658 0.1 2247 2.1	1743 -0.3 2342 2.3	11 0507 0.0 26 0005 2.4 Su 1122 2.5 M 0619 -0.1 1748 -0.1 1229 2.3 2348 2.2 1839 -0.1
12 0443 0. F 1104 2.1 1738 0.: 2327 2.1	27 C549 -0.2 Se 1213 2.7 1833 -0.2	12 0554 0.0 27 0053 2.3 N 1204 2.4 Tu 0710 0.1 1828 -0.1 1314 2.1 1922 0.0
13 0525 0.; Sa 1145 2.; 1019 0.;	28 C037 2.3 Su C648 0.0 1305 2.5 1923 -0.1	13 0034 2.3 28 0141 2.3 Tu 0646 0.0 W 0604 0.2 1250 2.3 1402 1.9 1912 -0.1 2006 0.1
14 0012 2.1 Su D513 0.1 1229 2.1 1903 0.1	1359 2.3 2013 0.0	14 0126 2.3 29 0223 2.2 W 0744 0.1 Th 0901 0.3 1342 2.1 1463 1.8 2001 -0.1 2057 0.2
15 0102 2. M 0707 0.: 1319 2.: 1951 0.	2103 0.1	15 0223 2.4 90 0330 2.2 Th 0646 0.1 F 1001 F 141 2.0 1549 1 2057 -0.1 2120 (
	31 C328 2.2 W C949 0.3 1550 1.9 2153 0.1	31 0428 Se 1101 1647 2246
		<u> </u>

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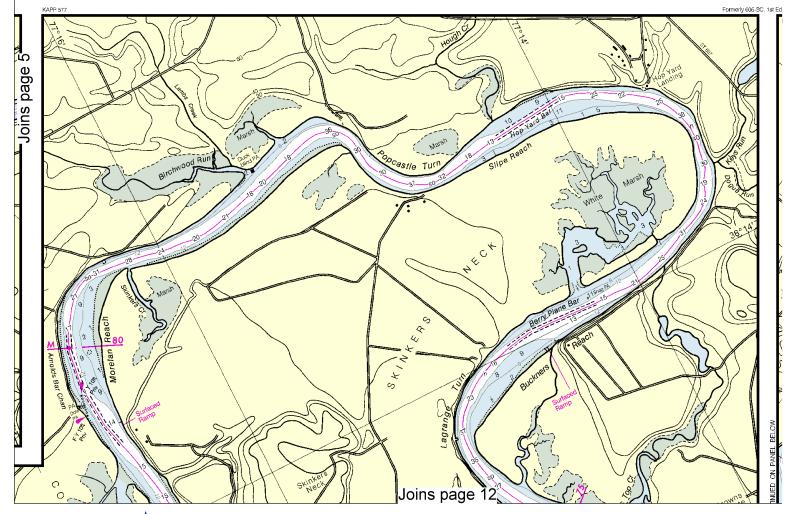
Total Service Mis

This BookletChart was reduced to 75% of the original chart scale. The new scale is 1:26667. Barscales have also been reduced and are accurate when used to measure distances in this BookletChart.

DEC	EMBE	R 2003		J.	ANUAF	RY 2004		FE	BRUA	RY 2004		۱ ۱	MARCH	1 2004	
Time Day	Ht.	Time Day	Ht.	Time Day	Ht.	Time Day	H1.	Time Day	Ht.	Time Day	Ht.	Time Day	Ht.	Time Day	Ht.
M 0923 1539	2.3 0.3 2.4 0.2	16 C157 Tu C806 1415 2042	2.2 0.3 2.3 0.1	I 0422 Th 1048 1641 2240	2.3 0.3 1.9	16 0328 F 0958 1546 2157	2.5 0.1 2.0 0.2	I 0526 Su 1157 1743 2341	2.2 0.4 .7 0.2	16 0528 M 1156 1748 2355	2.7 0.1 2.1 -0.2	I D442 M II I6 I701 2304	2.2 0.6 1.8 0.4	16 0519 Tu 1141 1740 2349	2.7 0.2 2.2 0.1
1836	2.3 0.3 2.3 0.2	17 C256 W C913 1515 2135	2,000	2 0515 F 1142 1733 2328	2.3 0.3 1.8 0.1	17 0432 Sa 1104 1653 2301	2.6 0.0 2.0 -0.2	2 0620 M 1248 1834	2.3 0.3 .8	17 0633 Tu 1256 1850	2.8 0.0 2.2	2 0542 Tu 1210 1759	2.3 0.5 1.9	17 0621 W 1237 1840	2.B 0.1 2.4
W 1125	2.4 0.3 2.2 0.2	18 C357 Th 1020 1617 2231	2.5 0.1 2.2 0.1	3 0604 Se 1232 1021	2.4 0.2 1.9	18 0528 Su 1209 1750	2.7 -D.1 2.0	3 0032 Tu 0707 1333 1922	0.1 2.4 0.2 .9	18 0057 & 0730 1349 1946	-0.3 2.9 0.2 2.4	3 0001 W 0634 1257 1850	0.3 2.4 0.3 2.1	18 0050 Th 0715 1328 1932	0.D 2.B 0.D 2.6
4 0555 h 1218 1815	2.5 0.3 2.2	19 C457 F 1124 1718 2327	2.7 0.0 2.2 -0.3	4 0015 Su 0650 1317 1906	0.0 2.4 0.2 1.9	19 0003 M 0641 1309 1900	-0.3 2.9 -0.2 2.1	4 0119 W 0750 1415 2005	0.0 2.5 0.1 2.0	19 0154 Th 0821 1436 2037	-0.3 2.9 -0.3 2.5	4 0052 Th 0719 1339 1835	0.1 2.5 0.2 2.3	19 0144 F 0803 1410 2018	-0.1 2.8 -0.1
1352	0.1 2.6 0.2 2.2	20 C556 Se 1224 1817	2.9 -0.2 2.3	5 0100 N 0733 1400 1948	0.0 2.5 0.1 1.9	20 0104 Tu 0739 1404 1957	-0.4 3.0 -0.3 2.2	5 0204 Th 0830 1453 2045	-0.1 2.6 0.0	20 0246 F 0908 1520 2124	-0.4 2.9 -0.3 2.6	5 0140 F 0901 1418 2017	0.0 2.6 0.0 2.4	20 0232 Sa 0847 1451 2101	-0.2 2.8 -0.1 2.8
a 0719 1344	0.1 2.7 0.1 2.2	21 C022 Su C653 1322 1914	-0,4 3,1 -0,3 2,3	5 0143 Tu 0614 1441 2029	-0.1 2.5 0.0 2.0	21 0201 W 0634 1456 2051	-0.5 3.0 -0.4 2.3	5 0246 F 0906 1530 2125	-0.1 2.6 -0.1 2.3	21 0334 Sa 0952 1601 2207	-0.4 2.8 -0.3 2.7	6 0224 Se 0840 1450 2058	-0.1 -0.1 -0.1	21 0317 Su 0927 1529 2140	-0.2 2.7 -0.1 2.9
u 0758 1424	0.0 2.7 0.1 2.2	22 CI17 M C749 1417 2009	0.5 3.2 0.4 2.4	7 0225 w 0852 1520 2108	-0.1 2.6 0.0 2.0	22 0258 Th 0925 1544 2142	-D.5 3.0 -0.4 2.4	7 0327 50 0945 1605 2204	-0.2 2.5 -0.2 2.4	22 0420 Su 1033 1640 2249	-0.3 2.7 -0.2 2.7	7 0308 Su 0920 1533 2138	-0.2 2.7 -0.2 2.9	22 0359 8 1005 1605 2218	-0.1 2.5 -0.1 2.9
M 0838	0.0 2.7 0.1 2.1	23 C212 Tu C843 I510 2102	-0.5 3.2 -0.4 2.4	8 0305 Th 0930 1557 2147	-0.1 2.6 0.0 2.0	23 0346 F 1013 1630 2231	-0.5 2.9 -0.4 2.4	8 0409 Su 1022 1641 2243	-0.2 2.6 -0.2 2.5	23 0505 M 1113 1718 2330	-0.2 2.5 -0.2 2.6	8 0352 M 1000 1610 2220	-0.2 2.7 -0.2 2.9	23 0439 Tu 1042 1641 2255	0.0 2.5 0.0 2.8
u 0912 1542	0.0 2.7 0.1 2.1	24 0306 W 0936 1601 2155	-0.5 3.2 -0.4 2.4	9 0344 F 1006 1834 2225	-0.1 2.6 -0.1 2.1	24 0439 Sa 1100 1714 2318	-0.4 2.8 -0.3 2.4	9 0453 M 1101 1718 2325	-0.2 2.5 -0.2 2.5	24 0549 Tu 1152 1756	0.0 2.3 0.0	9 U438 Tu 1041 1650 2304	-0.2 -0.2 -0.2 2.9	24 0519 W 1118 1717 2332	0.1 2.4 0.1 2.7
V/ 0949 1520	0.1 2.7 0.1 2.1	25 C400 Th 1029 1652 2249	0.5 3.1 0.3 2.4	10 0425 Se 1043 1710 2305	-0.1 2.5 -0.1 2.1	25 0529 Su 1145 1757	-0.3 2.6 -0.3	10 0539 Tu 1143 1756	-0.1 2.4 -0.2	25 0011 W 0633 1232 1838	2.5 0.2 2.2 0.1	10 0526 W 1125 1739 2352	-0.2 -0.2 -0.2 2.9	25 0559 Th 1154 1755	0.3 2.2 0.2
h 1026	0.1 2.6 0.2 2.0	26 C454 F 1121 1743 2342	-0.4 2.9 -0.3 2.3	11 0507 Su 1122 1748 2348	0.0 2.5 0.1 2.2	26 0005 M 0619 1229 1839	2.4 -0.1 2.3 -0.1	II 0011 W 0630 1229 1842	2.6 -0.1 2.3 -0.2	26 0053 Th 0720 1314 1918	2.4 0.3 2.0 0.2	11 0617 Th 1212 1920	0.0 2.4 -0.1	26 0012 F 0642 1233 1835	2.5 0.4 2.1 0.4
F 1104 173B	0.1 2.6 0.2 2.0	27 C549 Se 1213 1833	-0.2 2.7 -0.2	12 0554 N 1204 1828	0.0 2.4 -0.1	27 0053 Tu 0710 1314 1922	2.3 0.1 2.1 0.0	12 0102 Th 0726 1320 1933	2.8 0.0 2.2 -0.1	27 0141 F 0812 1401 2005	2.3 0.5 1.9 D.3	12 0045 F 0714 1308 1914	2.9 0.1 2.2 0.0	27 0058 Se 0730 1315 1923	2.4 0.6 2.0 0.5
3 0525 a 1145 1819	0.2 2.5 0.2	20 0037 Su 0646 1305 1923	2.3 0.0 2.5	13 0034 Tu 0646 1250 1912	2.3 2.3 -0.1	28 0141 W 0604 1402 2008	2.3 0.2 1.9 0.1	13 0200 F 0630 1420 2031	2.6 2.0 -0.1	28 0235 Se 0911 1456 2101	2.2 0.6 1.8 0.4	13 0145 Sa 0817 1407 2017	2.8 0.2 2.1	26 0147 Su 0825 1411 2018	2.3 0.7 1.9 0.5
u D513 1229	2.0 0.2 2.4 0.2	29 C133 M C746 1359 2013	2.2 0.1 2.3 0.0	14 0126 W 0744 1342 2001	2.3 0.1 2.1 -0.1	29 0223 Th 0901 1453 2057	2.2 D.3 I.8 D.2	14 0306 Se 0939 1527 2137	2.6 0.2 2.0 0.0	29 0337 Su 1014 1558 2203	2.2 0.6 1.8 0.4	14 0254 Su 0927 1517 2128	2.7 0.3 2.1 0.2	29 0247 H 0926 1513 2120	2.9 0.7 1.9 0.6
1319	2.1 0.3 2.3 0.1	30 0230 Tu 0847 1454 2103	2.2 0.2 2.1 0.1	15 0223 Th 0848 1441 2057	2.4 0.1 2.0 -0.1	30 0330 F 1001 1549 2150	2.2 0.4 1.7 0.2	15 0418 Su 1050 1638 2247	2.6 0.2 2.0 -0.1			15 0408 M 1037 1831 2241	2.7 0.3 2.1 0.1	30 0352 Tu 1027 1618 2225	2.3 0.7 2.0 0.5
		31 C326 W C949 1550 2150	2.2 0.3 1.9 0.1			31 0426 Se 1101 1647 2246	2.2 0.4 1.7 0.2							31 0455 W 1123 1719 2328	2.3 0.6 2.1 0.4

APRIL 20	04	MAY	2004	JUNE 2004	JULY 2004
Time H1. Day Day	Time Ht.	Time H1. Day h.m. f1.	Time Ht. Day h.m. ft.	Time Ht. Time Ht. Day Day h.m. ft. h.m. ft.	Time Hi. Time Hi. Day Day
		I 0558 2.5 Se 1208 0.2 I622 2.8	16 0108 0.2 Su 0710 2.4 1304 0.1 1927 2.9	D11 -0.1 16 02 0.2 Tu 0706	I 0148 -0.1 18 0227 0.3 Th 0740 2.4 F 0818 2.2 1341 -0.2 1412 0.3 2014 3.3 2039 2.8
2 0021 0.3 17 0 F 0840 2.5 Se 0 1255 0.2 1859 2.5	1129 0.0 1739 2.7 339 0.1 955 2.9	2 0043 0.1 Su 0647 2.6 1254 0.1 1911 3.0	17 0159 0.1 M 0752 2.4 1344 0.1 2007 2.9	2 0206 -0.2 17 0251 0.2 W 0800 2.5 Th 0843 2.2 1400 -0.2 1434 0.2 2029 3.4 2100 2.8	2 0243 -0.2 17 0306 0.3 F 0837 2.5 Se 0859 2.2 1439 -0.3 1453 0.2 2110 3.3 2117 2.8
3 0112 0.1 18 0 Sa 0725 2.7 Su 0 1337 0.1 1944 2.8 2		3 D135 O.0 M D73B 2.6 134D O.1 1959 3.2	18 0234 0.1 Tu 0831 2.4 1422 0.1 2045 2.9	3 D259 -0.2 18 0331 0.2 Th D853 2.5 F 0922 2.2 1544 0.3 1515 D.2 2123 3.4 2139 2.7	3 0337 -0.2 IB 0344 D.2 5a 0933 2.6 Su 0938 2.3 1536 0.3 1554 0.2 2204 3.3 2154 2.8
1417 0.0	1257 0.0 1900 2.6 455 0.1	4 0228 -0.2 Tu 0825 2.6 1426 -0.2 2048 3.3	19 0314 0.1 W 0909 2.3 1501 0.2 2122 2.9	4 0353 -0.2 19 0408 0.2 F 0947 2.5 9e 1000 2.2 1549 -0.2 1555 0.2 2218 3.3 2216 2.7	4 0428 -0.2 19 0420 0.2 Su 1028 2.6 M 1016 2.3 1633 -0.2 1614 0.3 2258 3.1 2229 2.7
5 0247 -0.2 20 0 N 0852 2.8 Tu 0 1458 -0.1 2112 3.1 2	1336 0.0 1937 2.5 531 0.1 1148 2.9	5 0318 -0.2 W 0914 2.6 1514 -0.2 2138 3.4	20 0352 0.2 Th 0946 2.3 1536 0.2 2159 2.6	5 0445 -0.2 20 0447 0.2 Se 1042 2.5 Su 1039 2.2 1645 -0.2 1634 0.3 2314 3.2 2253 2.6	5 0518 -0.2 20 0455 0.2 M 1122 2.7 TU 1054 2.4 1730 -0.1 1656 0.3 2350 3.0 2306 2.7
1540 -0.2	012 2.4 007 0.2 1224 2.8	6 0408 -0.2 Th 1003 2.6 1004 -0.2 2230 3.3	21 0430 0.2 F 1022 2.2 1017 0.3 2237 2.7	6 0340 -0.1 21 0524 0.8 Su 1139 2.5 W 1118 2.2 1744 -0.1 1710 0.3 2331 2.6	6 0608 -0.1 21 0530 0.2 Tu 1217 2.7 W 1133 2.5 1628 0.0 1739 0.3 2345 2.6
1625 -0.2	1453 0.2 048 2.3 644 0.2 1301 2.7	7 0500 -0.2 F 1055 2.6 1657 -0.1 2325 3.2	22 0509 0.3 5e 1100 2.2 1656 0.3 2315 2.6	7 0010 3.0 22 0602 0.3 M 0634 -0.1 Tu 1159 2.2 1237 2.5 1800 0.4	7 0043 2.8 22 0606 0.2 9 0657 0.0 Th 1215 2.6 1311 2.6 1826 0.3 1928 0.2
Th 1109 2.6 F	1632 0.3 124 2.2 722 0.3 1340 2.6	6 0555 0.0 Se 1130 2.5 1754 0.0	23 0549 0.4 Su 1140 2.1 1737 0.4 2955 2.5	8 0108 2.8 23 0011 2.5 Tu 0729 0.0 W 0841 0.3 1338 2.5 1243 2.3 1949 0.2 1848 0.4	9 0135 2.5 23 0027 2.5 Th 0748 0.1 F 0846 0.2 1406 2.6 1301 2.6 2026 0.3 1919 0.4
9 0606 U.O 24 U F 1200 2.5 Sa I 1805 0.0	8613 0.5 203 2.1 803 0.4	9 0023 3.1 Su 0632 0.1 1250 2.4 1856 0.1	24 0630 0.4 M 1223 2.1 IB22 0.5	9 0207 2.6 24 0055 2.4 W 0823 0.1 Th 0722 0.3 1438 2.5 1331 2.4 2054 0.3 1942 0.4	9 0228 2.3 24 0114 2.4 F 0834 0.2 Sa 0730 0.2 1501 2.6 1353 2.7 2126 0.4 2018 0.4
10 0033 3.0 25 0 5e 0704 0.1 5u 0 1257 2.3 1904 0.1	022 2.5 657 0.6 247 2.1 849 0.5	10 0125 2.9 M 0752 0.2 1354 2.4 2003 0.2	25 0039 2.5 Tu 0714 0.5 1310 2.1 1913 0.5	10 0306 2.5 25 0144 2.3 Th 0916 0.1 F 0807 0.2 1538 2.6 1423 2.5 2158 0.3 2042 0.4	10 0324 2.2 25 0206 2.3 \$6 0924 0.3 \$6 0821 0.2 1556 2.6 1450 2.8 2225 0.4 2121 0.4
1401 2.3	1109 2.4 1747 0.6 337 2.0 942 0.5	11 0230 2.7 Tu 0632 0.2 1500 2.4 2113 0.3	26 0127 2.4 W 0800 0.4 1402 2.2 2010 0.5	11 0404 2.3 26 0238 2.3 F 1007 0.2 5e 0856 0.2 1634 2.6 1519 2.6 2258 0.3 2144 0.3	11 0418 2.1 28 0908 2.2 Su 1014 0.3 M 0918 0.2 1650 2.6 1553 2.9 2321 0.5 2228 0.3
12 0245 2.7 27 0 M 0913 0.3 Tu 0 1512 2.2 2122 0.3 2	1203 2.3 1841 0.6 435 2.0 1842 0.6	12 0335 2.6 W 0951 0.2 1605 2.5 2221 0.3	27 0220 2.3 Th 0849 0.4 1458 2.3 2111 0.5	12 0459 2.2 27 0387 2.2 Se 1056 0.2 Su 0948 0.1 1726 2.7 1618 2.8 2353 0.3 2248 0.2	12 0512 2.0 27 0414 2.2 M 1104 9.3 Tu 1021 0.1 1741 2.6 1659 3.0 2333 0.3
1623 2.3	1303 2.3 1937 0.8 138 2.1 146 0.6	13 0437 2.5 Th 1048 0.2 1705 2.6 2323 0.3	26 0317 2.3 F 0940 0.3 1534 2.5 2214 0.4	13 0550 2.2 26 0439 2.2 Su 1143 0.2 U 1046 0.0 1814 2.7 1718 3.0 2351 0.1	13 0013 0.4 26 0520 2.3 Tu 0603 2.0 W 1125 0.1 1154 0.3 1808 3.1
14 0503 2.7 29 0 W 1118 0.3 Th 1727 2.5 2340 0.2 3	403 2.3 030 0.5 635 2.3 249 0.5	14 0534 2.5 F 1135 0.2 1759 2.7	29 0415 2.3 Sa 1031 0.2 1651 2.7 2316 0.2	14 0043 0.3 29 0541 2.3 M D537 2.2 Tu 1144 0.0 1228 0.2 1818 3.1 1858 2.7	14 0101 0.4 29 0035 0.2 W 0551 2.1 Th 0625 2.4 1242 0.3 1229 0.0 1916 2.7 1904 3.2
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1 03 Su 09 15: 21:	17 - 17 24 -	0.1 2.8 0.2 3.2	
2 04 M 10 16 22	04 - 06 18 -	0.2 2.9 0.1 3.1	
3 049 Tu 109 17 23:	50 - 58 11	0.1 2.9 0.0 2.9	
4 05: W I I I I 8		0.0 9.5 1.0	
5 00 Th 06 12:	11 19 36 56	2.7 0.1 2.6 0.3	
6 007 F 07/ 13:	56 24 26 51	2.5 0.2 2.7 0.5	
7 01- 50 07: 14 20-	48 50 18 48	2.3 0.3 2.7 0.6	
8 02: Su 08: 15 21:	99 13 47	2.2 0.4 2.6 0.7	
9 03: М 09: 16 22:	32 11 45	2.1 0.5 2.6 0.7	
10 04; Tu 10: 17: 23-	32 27 38 41	2.0 0.5 2.6 0.7	
W 113	28 22 31	2.1 0.5 2.6	
12 000 Th 06. 12 180	31 20 15 50	0.6 2.1 0.5 2.7	
13 01 F 071 131 191	16 08 03	0.5 2.2 0.4 2.8	
14 015 Sa 075 13- 20		0.4 2.4 0.4 2.8	
15 02: Su 08: 14: 20:	36 32 31 50	0.3 2.5 0.3 2.9	

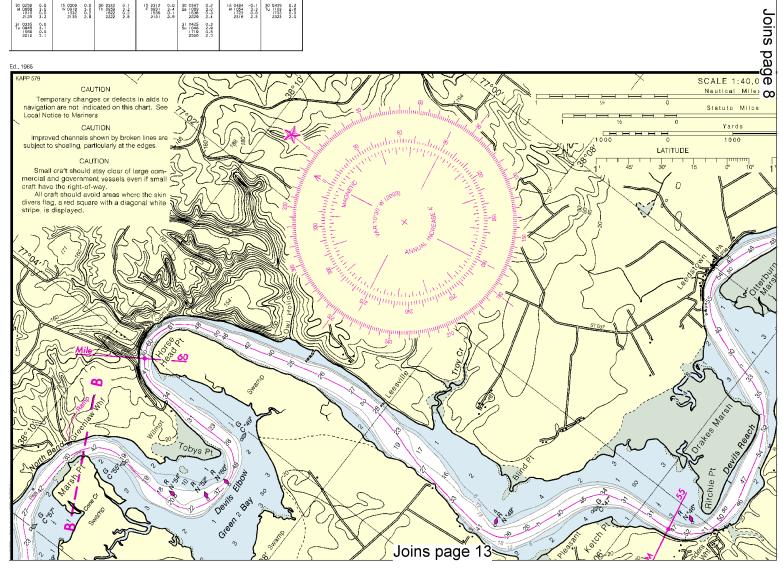






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17 0347 Tu 0948 1554 2203	0.2 2.7 0.3 2.8	2 0458 Th 1114 1735 2336	0.1 0.3 2.7	17 0423 F 1039 1701 2256	9.2 9.3 0.3 2.7	2 0459 Se 1120 1749 2341	0.3 3.0 0.5 2.4	17 0440 Su 1107 1737 2327	0.1 3.3 0.2 2.6	2 0547 Tu 1212 1849	0.5 2.8 0.7	17 0015 W 0620 1252 1921	2.4 0.1 3.0 0.1
18 0421 W 1026 1835 2240	0.2 2.8 0.3 2.8	3 0538 F 1157 1023	0.2 3.0 0.5	18 0503 Sm 1124 1751 2342	0.2 3.2 0.3 2.8	3 0539 Su 1202 1035	0.5 2.9 0.7	IB 0531 M 1201 1034	0.2 3.2 0.3	3 0035 W 0835 1300 1940	2.1 0.6 2.5 0.7	18 01 19 Th 0727 1356 2022	2.3 0.2 2.0 0.2
19 0458 Th 1105 1719 2319	0.2 2.9 0.3 2.7	4 0019 Se 0820 1243 1912	2.5 0.4 2.9 0.6	19 0549 Su 1215 1846	0.3 3.2 0.4	4 5023 M 0622 1249 1925	2.3 0.6 2.7 0.8	19 0023 Tu 0628 1302 1936	2.5 0.3 3.1 0.4	4 0128 Th 0729 1354 2034	2.1 0.7 2.4 0.7	19 0227 F 0838 1502 2122	2.4 0.3 2.7 0.2
20 0533 F 1148 1807	0.2 2.9 0.3	5 0104 Su 0704 1332 2006	2.3 0.5 2.7 0.8	20 0034 M 0640 1313 1947	2.5 0.3 3.1 0.5	5 0111 Tu 0711 1342 2022	2.2 0.7 2.6 0.9	20 0127 W 0734 1410 2042	2.4 0.4 3.0 0.5	5 9227 F 0830 1452 2127	2.1 0.7 2.4 0.7	20 0333 Sa 0949 1606 2218	2.4 0.3 2.6 0.1
21 0002 Se 0614 1235 1900	2.6 0.2 3.0 0.4	8 0154 M 0754 1427 2105	2.2 0.6 2.0 D.9	21 0134 Tu 0741 1419 2054	2.4 0.4 3.0 0.6	6 6207 W 0606 1442 2121	2.1 0.8 2.5 0.9	21 0238 Th 0646 1520 2147	2.4 0.4 2.9 0.4	6 0328 Se 0933 1549 2218	2.2 0.7 2.4 0.6	21 0488 Su 1055 1704 2310	2.5 0.2 2.5 0.1
22 0051 50 0701 1329 2000	2.5 0.3 3.0 0.5	7 0250 Tu 0850 1528 2205	2.1 0.7 2.6 0.9	22 D242 W 0850 1530 2203	2.3 0.5 3.0 0.6	7 0310 Th 0011 1544 2219	2.1 0.8 2.5 0.9	22 0350 F 1000 1828 2247	2.5 0.4 2.9 0.4	7 9425 5u 1034 1644 2304	2.3 0.5 2.4 0.4	22 0534 H 1154 1758 2358	2.7 0.2 2.4 0.0
23 0147 M 0758 1430 2105	2.4 0.9 3.0 0.5	8 0351 W 0950 1630 2303	2.1 2.6 2.6	23 0356 Th 1003 1641 2307	2.4 0.4 3.0 0.5	6 0413 F 1014 1643 2310	2.2 0.8 2.6 0.7	23 0457 Se 1108 1728 2340	2.6 0.4 2.9 0.2	8 0517 M 1131 1735 2349	2.5 0.5 2.5 0.3	23 0624 Tu 1246 1846	2.8 0.1 2.4
24 U250 Tu 0859 1538 2214	2.3 0.3 3.0 0.5	9 0452 Th 1050 1727 2355	2.2 0.7 2.6 0.7	24 U506 F 1114 1744	2.0 0.4 3.1	9 0510 Se 1113 1734 2356	2.3 0.7 2.6 0.6	24 0554 Su 1209 1822	2.8 0.3 2.9	9 0605 Tu 1223 1823	2./ 0.3 2.5	24 0042 W 0709 1333 1930	0.0 2.9 0.1 2.4
25 0400 W 1007 1648 2320	2.3 0.3 3.0 0.4	10 0349 F 1146 1816	2.3 0.8 2.7	25 0004 Sm 0808 1217 1841	0.3 2.7 0.3 2.1	10 0559 Su 1206 1820	2.5 0.8 2.7	25 0028 M 0645 1302 1910	0.2 3.0 0.2 2.8	10 0032 W 0651 1313 1910	0.1 3.0 0.1 2.6	25 0124 Th 0751 1416 2010	0.0 2.9 0.1 2.3
25 0510 Th 1117 1754	2.4 0.2 3.1	11 0040 Sa 0636 1237 1900	0.6 2.4 0.5 2.8	26 0055 Su 0702 314 931	0.2 2.9 0.2 3.1	II 0037 M 0644 1254 1993	0.4 2.7 0.4 2.8	25 0112 Tu 0731 1350 1954	9.1 3.1 0.1 2.8	11 0115 Th 0736 1401 1956	0.0 3.2 0.0 2.6	26 0204 F 0830 1457 2049	0.0 2.9 0.1 2.3
27 0021 F 0618 1222 1854	0.3 2.5 0.1 3.2	12 0120 Su 0720 1323 1940	0.5 2.8 0.4 2.9	27 0140 M 0751 1405 2017	0.1 3.1 0.1 3.1	12 0116 Tu 0726 1340 1944	0.3 2.9 0.3 2.8	27 0153 # 0613 1435 2035	0.1 3.2 3.1 2.7	12 0200 F 0823 1450 2043	-0.1 3.3 -0.1 2.6	27 0243 \$6 0909 1537 2127	0.0 2.9 0.1 2.2
26 01 16 \$4 07 15 1322 1940	0.2 2.7 0.0 3.3	13 0156 M 0801 1407 2019	0.4 2.8 0.3 2.9	28 0223 Tu 0836 1453 2101	0.1 3.2 0.1 3.0	13 0154 W 0807 1425 2026	0.2 3.1 0.2 2.0	28 0232 Th 0853 1517 2114	0.1 3.2 0.1 2.6	13 0245 Sa 0911 1540 2131	-0.2 3.4 -0.1 2.6	28 0321 Su 0948 1616 2204	0.1 2.8 0.2 2.2
29 0206 Su 0808 1418 2039	0.0 2.9 0.0 3.3	14 0234 Tu 0939 1449 2057	0.3 2.9 0.3 2.9	29 0303 W 0919 1539 2142	0.1 3.2 0.1 2.9	14 0232 Th 0849 1510 2198	0.1 3.3 0.1 2.8	29 0310 F 0931 1558 2152	0.1 3.1 0.2 2.5	14 0333 Su 1001 1831 2222	-0.2 3.4 -0.1 2.5	29 0400 N 1024 1855 2243	0.1 2.7 0.3 2.1
30 0252 M 0958 1510 2125	0.0 3.0 0.0 3.2	15 0309 W 0918 1532 2135	0.2 3.0 0.2 2.9	30 0342 Th 0959 1822 2222	0.1 3.2 0.2 2.8	15 0312 F 0931 1556 2151	0.0 3.4 0.1 2.8	30 0347 Se 1009 1538 2229	0.2 3.0 0.3 2.4	IS 0424 M 1054 1725 2316	-0.1 3.3 0.0 2.5	30 0439 Tu 1103 1735 2323	0.2 2.6 0.3 2.0
31 0335 Tu 0945 1559 2210	0.0 3.1 0.0 3.1							31 0425 Su 1048 1719 2300	0.3 2.9 0.5 2.3				

NOAA and its partner, and critical corrections. Editions are available 5-8 about Print-on-Demand he p@ Nautical Charts. qhelp@OceanGrafix.com.



NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, http://NauticalToats.gov, he p@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, http://OceanGrafix.com, or help@OceanGrafix.com

PRINT-ON-DEMAND CHARTS

MARINE WEATHER FORECASTS

TELEPHONE NUMBERS OFFICE HOURS NATIONAL WEATHER SERVICE Baltimore, MD / Washington, DC *(703) 260-0107 24 hours daily 24 hours daily 24 hours daily Wakefield, VA *(757) 899-4200 Newport, NC *(252) 223-5737

* Recorded

NOAA WEATHER RADIO BROADCASTS

CITY	STATION	FREQ.	BROADCAST TIMES
Manassas, Va.	KHB-36	162.55 MHz	24 hours daily
Salisbury, Md.	KEC-92	162.475 MHz	24 hours daily
Norfolk, Va.	KHB-37	162.55 MHz	24 hours daily
Heathsville, Va.	WXM-57	162.40 MHz	24 hours daily

BROADCASTS OF MARINE WEATHER FORECASTS AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS

CITY STATION FREQ. BROADCAST TIMES-EST SPECIAL WARNIN

Hampton Roads, Va. 08-NMN 2670 kHz 8:33 AM & 9:03 PM * Recorded

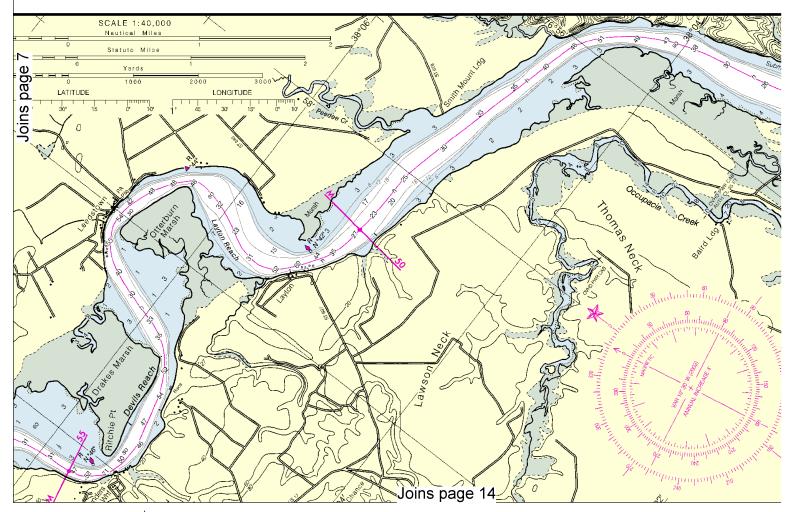
Distress calls for small craft are made on 2182 kHz or channel 16 (156.80 MHz) VHF.

PUBLIC BOATING INSTRUCT ON PROGRAMS

The United States Power Squadrons (USPS) and U.S. Coast Guard Auxiliary (USCGAUX), national organizations of boatmen, conduct extensive boating instruction programs in communities throughout the United States. For information regarding these educational courses, contact the following sources:

USPS - Local Squadron Commander or USPS Headquarters, Post Office Box 30423, Raleigh, N.C. 27612, 919-821-0281.

USCGAUX-5th Coast Guard District, Federal Building, 431 Crawford St., Portsmouth, VA 23704-5004, Tel. 804-398-6208 or USCG Headquarters (G-BAU), Washington, D.C. 20593-0001.





MERCATOR PROJECTION AT SCALE 1:20,000 & 40,000 SOUNDINGS IN FEET AT MEAN LOWER LOW WATER NORTH AMERICAN DATUM OF 1983 (WORLD GEODETIC SYSTEM 1984)

HEIGHTS

Heights in feet above Mean High Water.

AUTHORITIES

Hydrography and topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

ABBREVIATIONS

(For complete list of Symbols and Abbreviations, see Chart No. 1)

WARNING

NING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Imagery and Mapping Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 3 for important supplemental information.

Additional information can be obtained at nauticalcharts.noaa.gov.

NORA SALTON

NAUTICAL CHART 12237

RAPPAHANNOCK RIVER CORROTOMAN RIVER TO FREDERICKSBURG

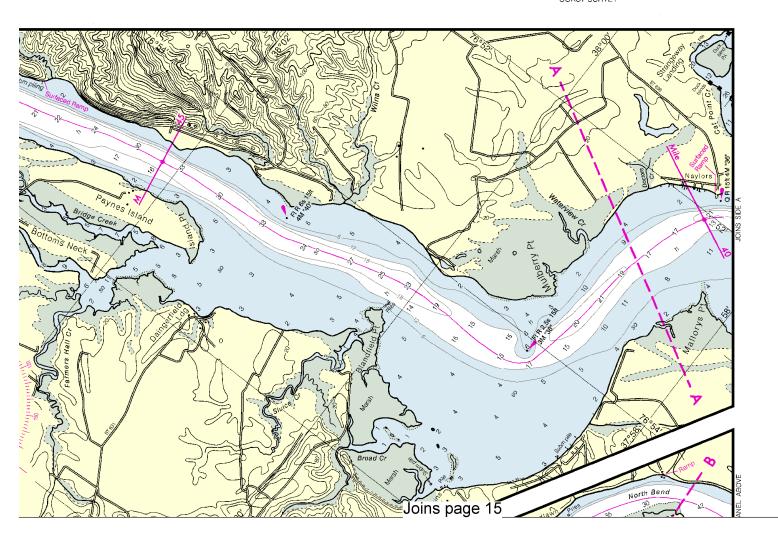


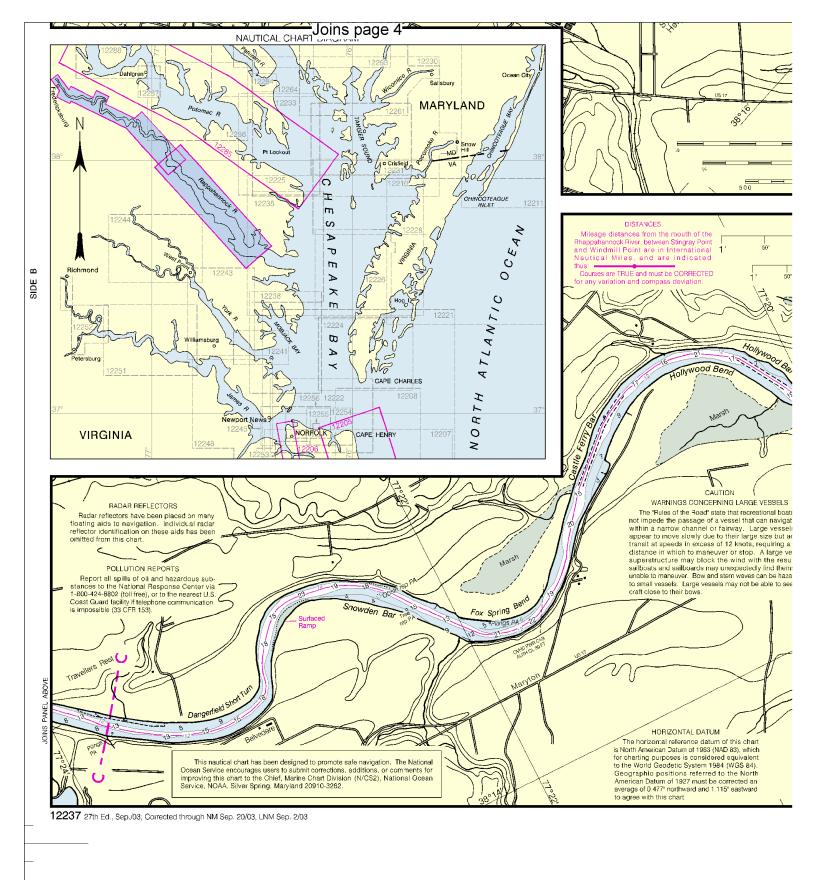


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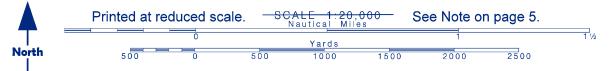
Chart 12237 27th Ed., Sep./03 ■ Corrected through NM Sep. 20/03, LNM Sep. 2/03

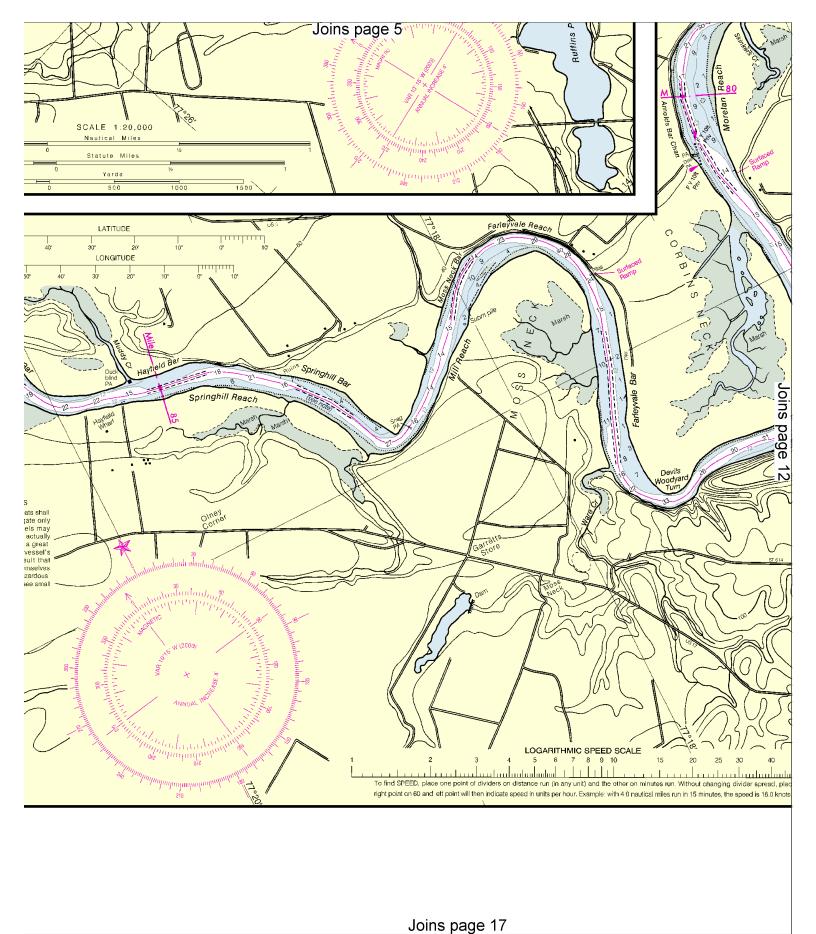
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U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

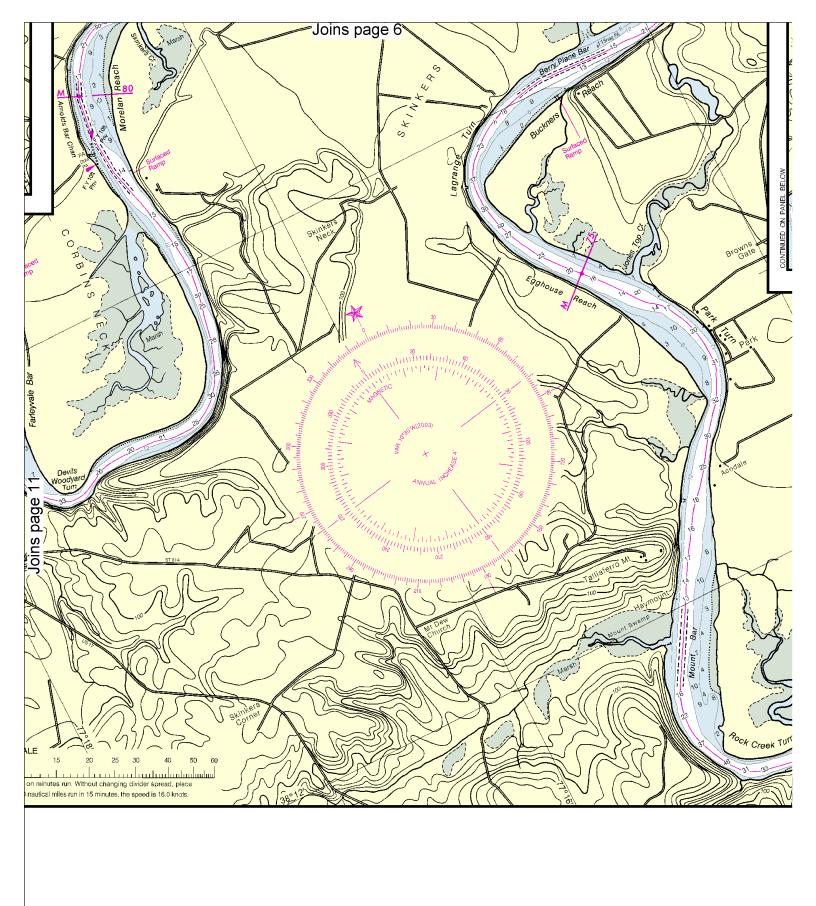






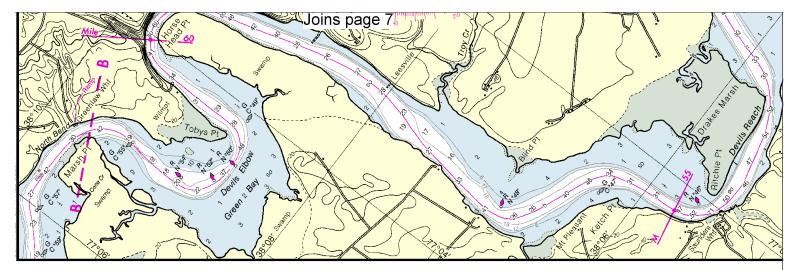


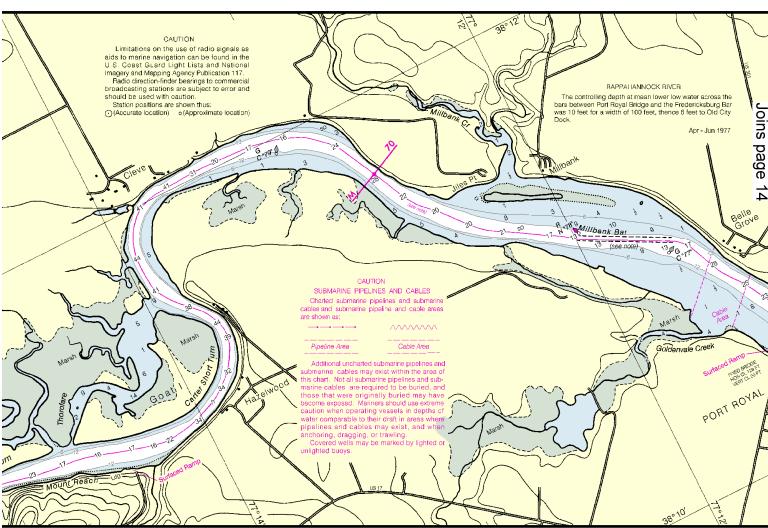


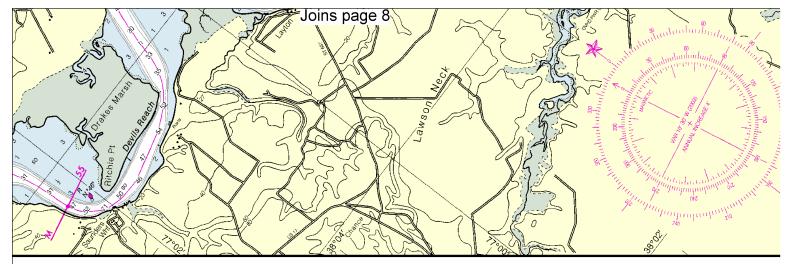


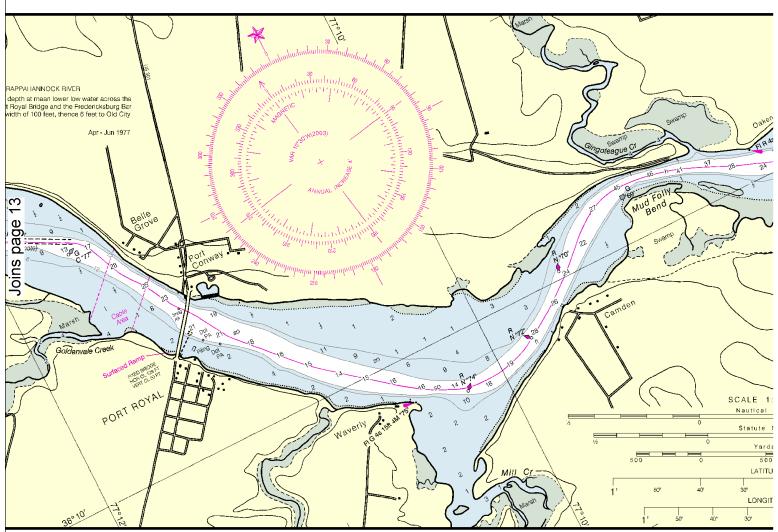




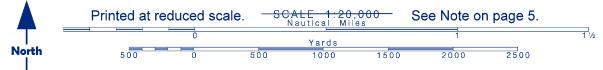


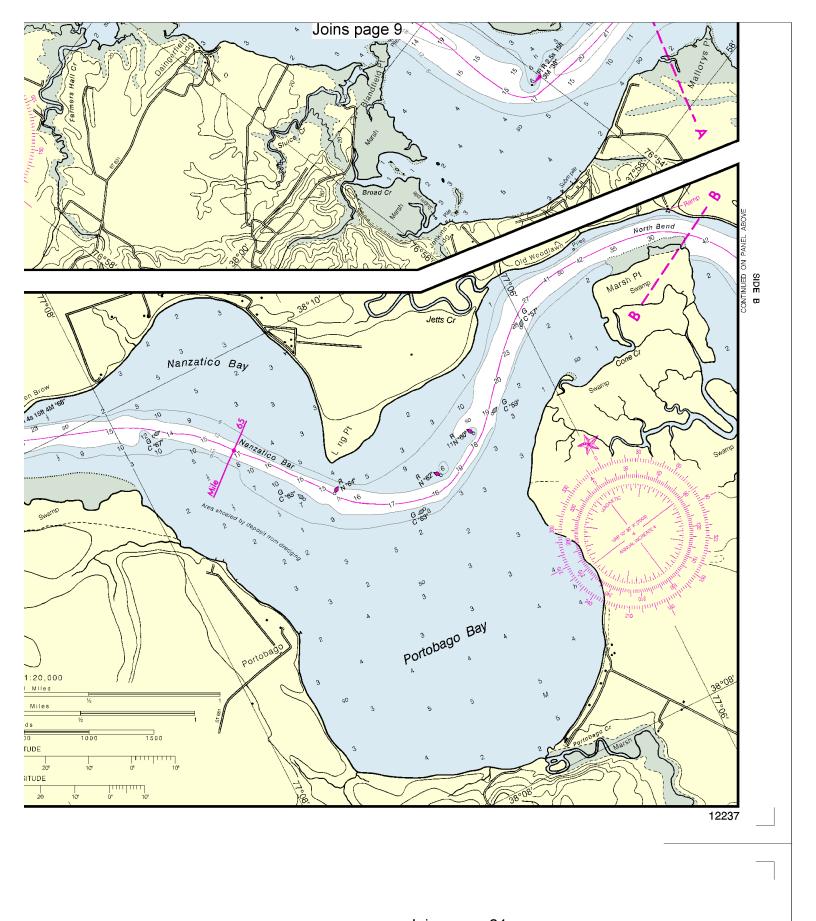


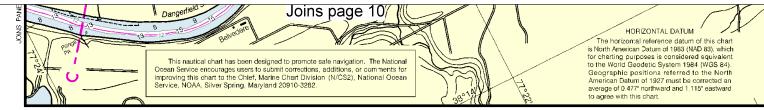






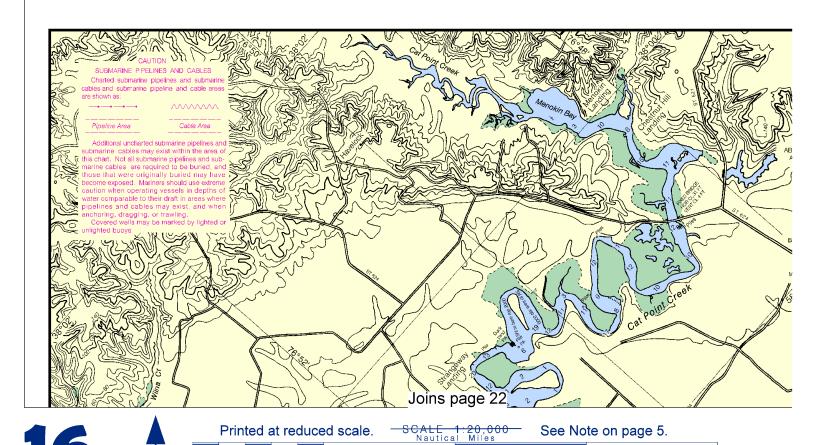




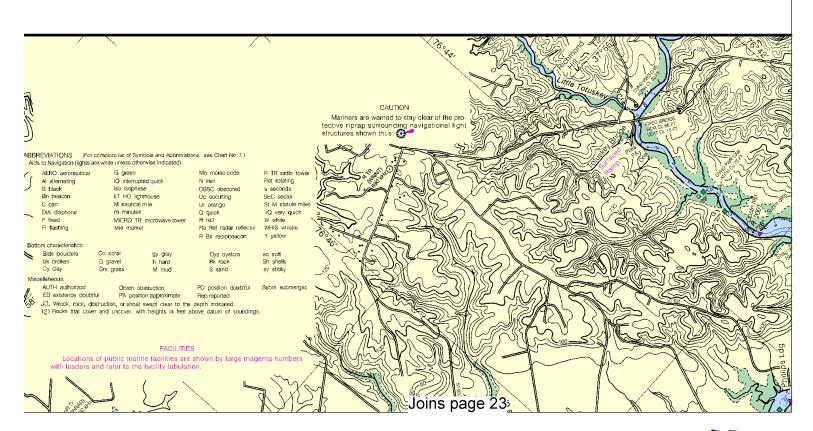


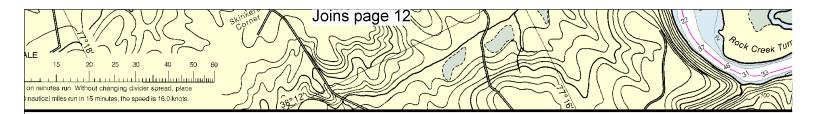
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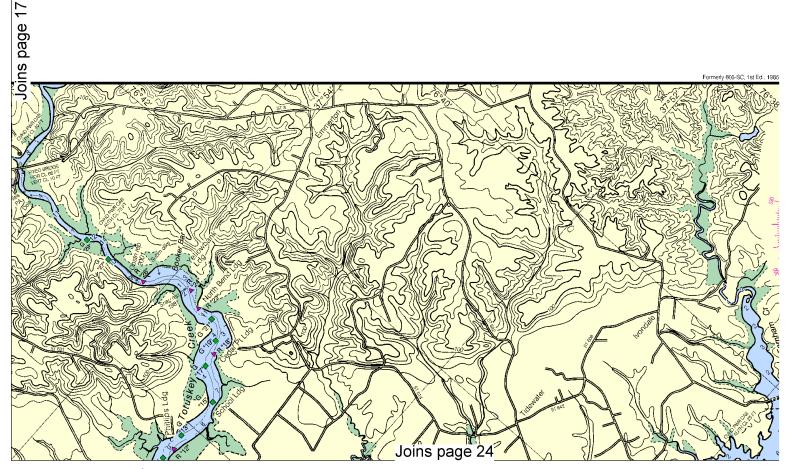
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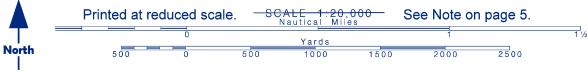


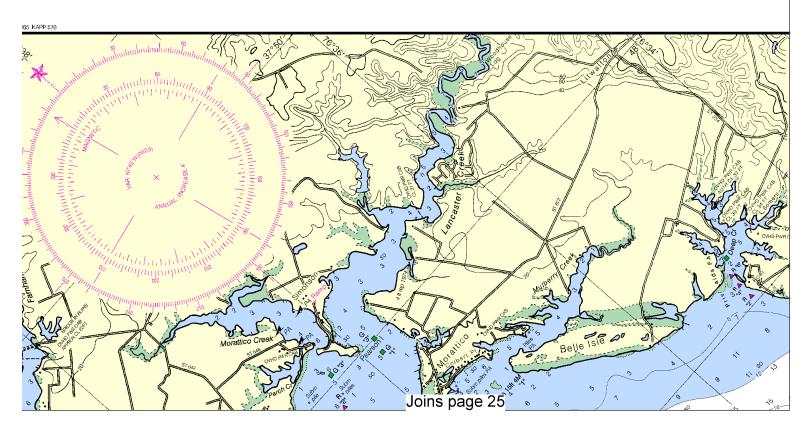
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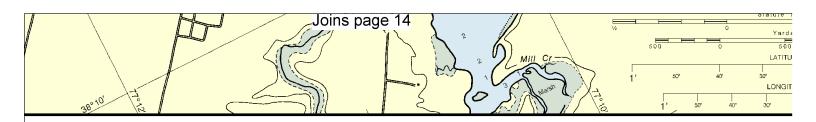


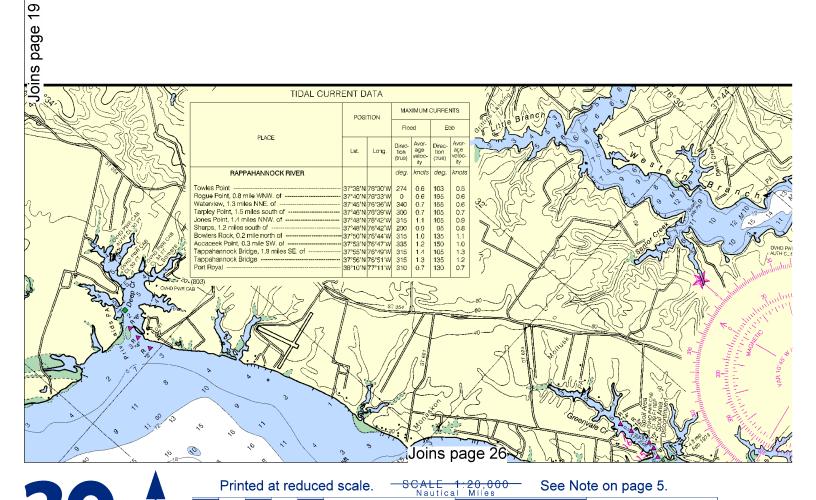






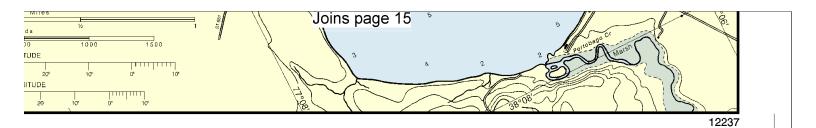
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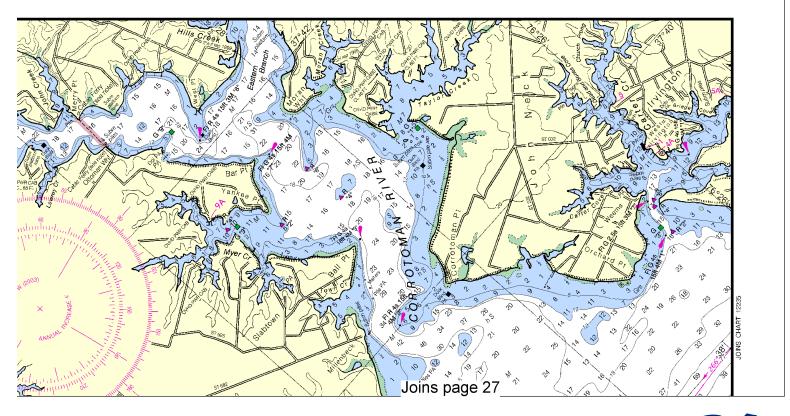


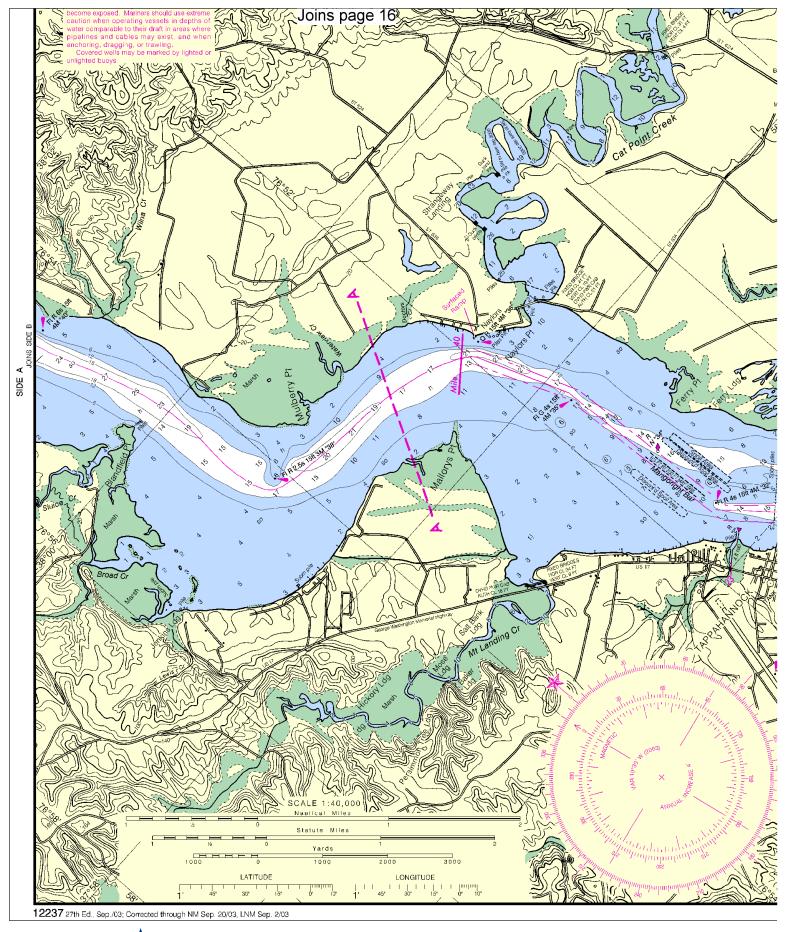


Yards

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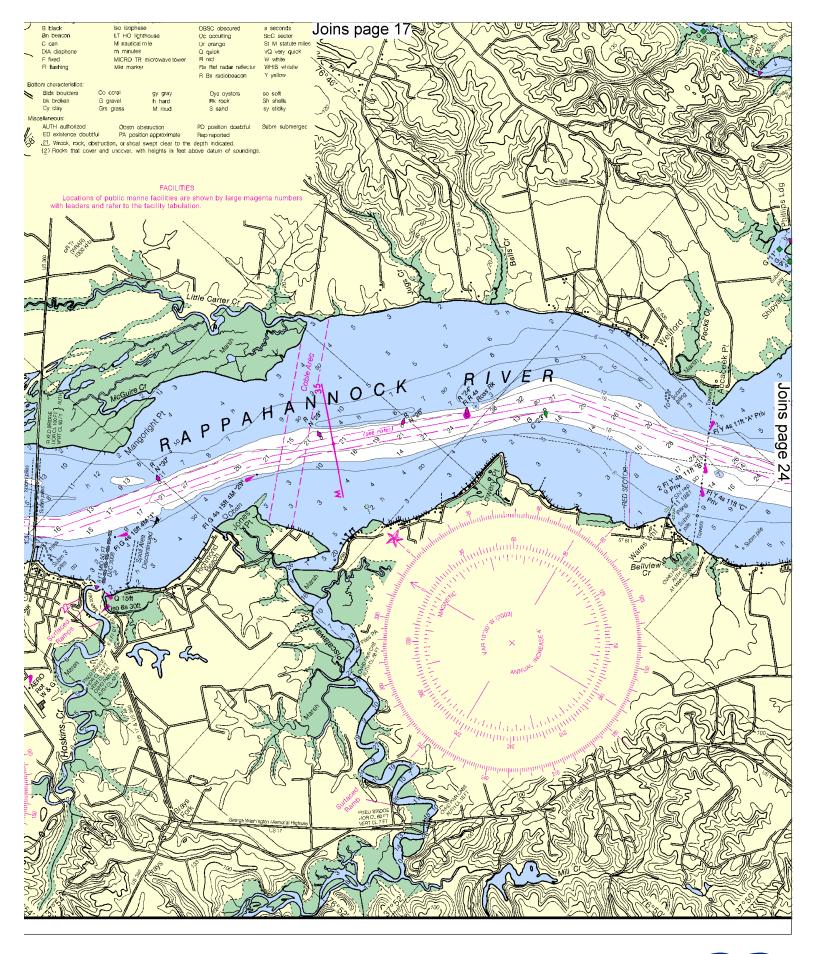


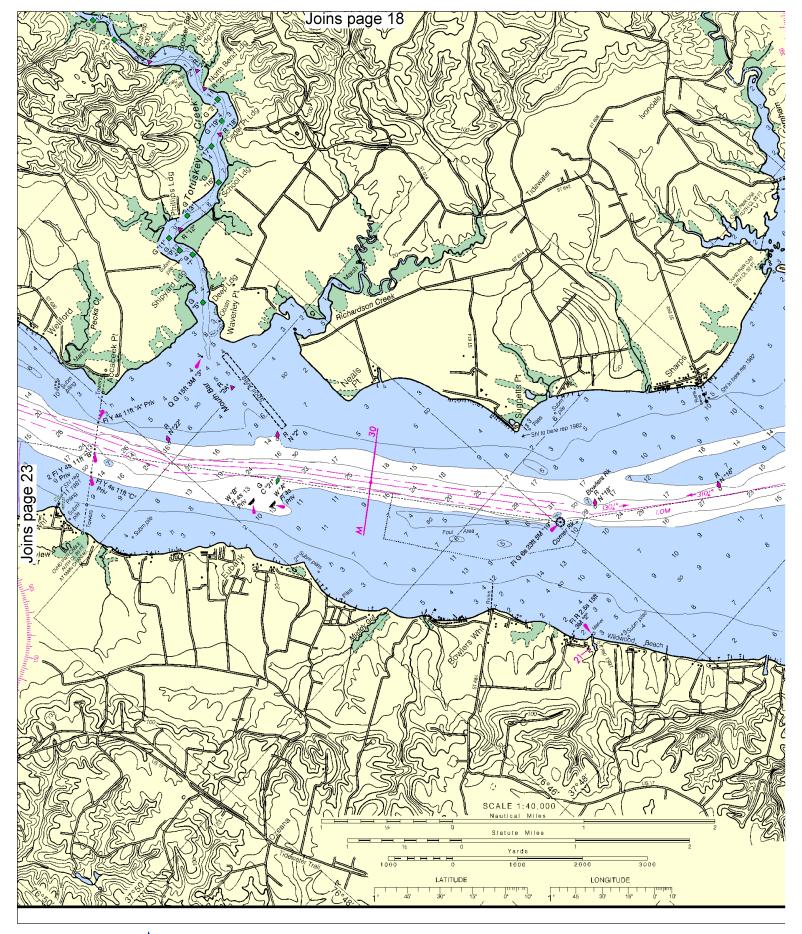






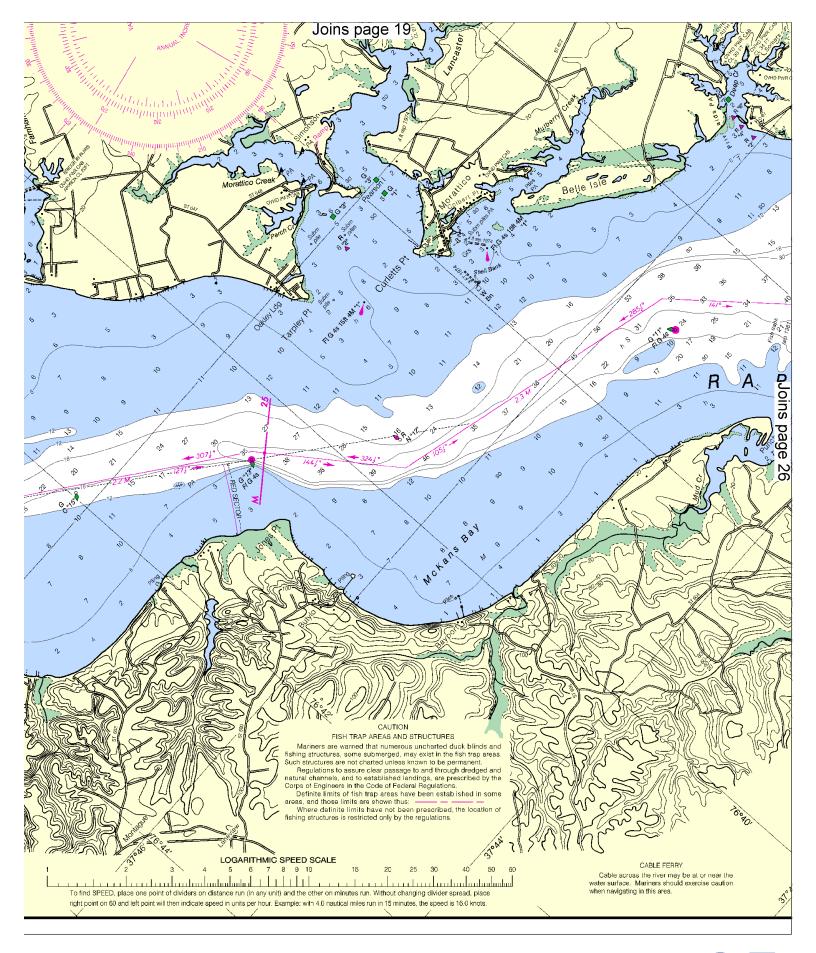


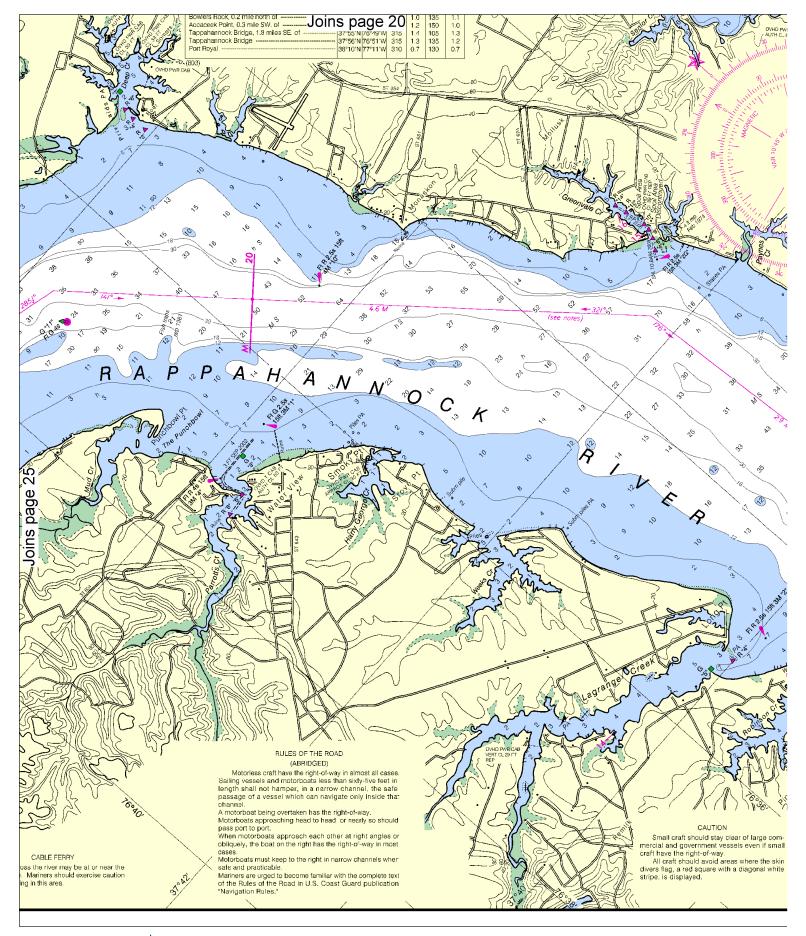






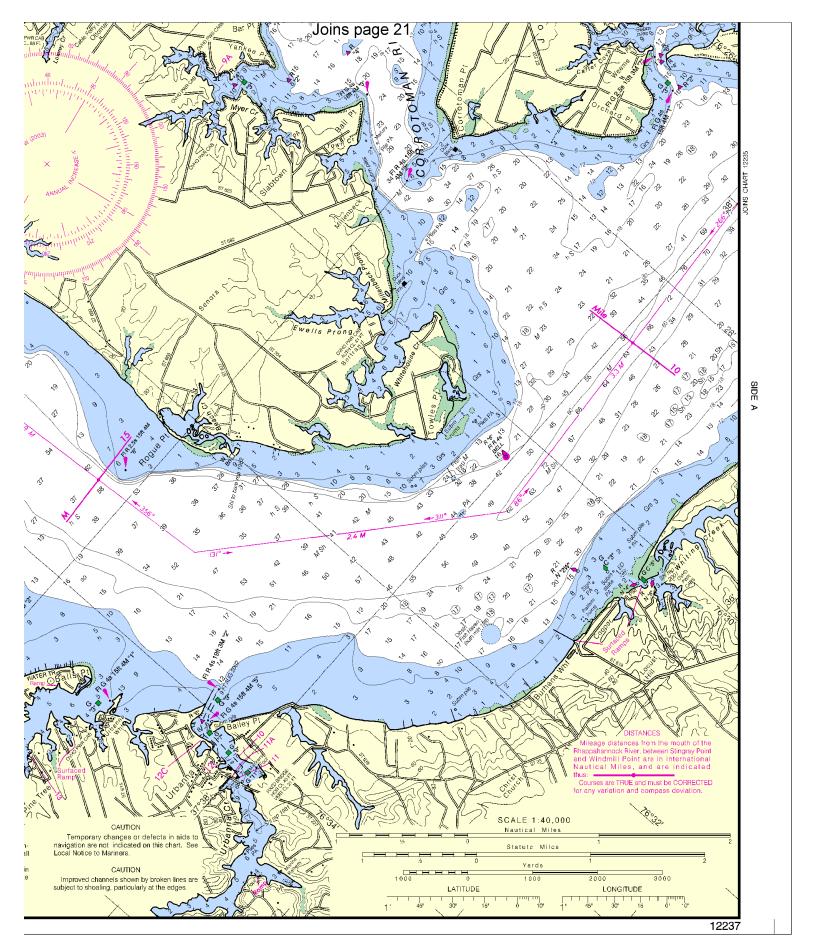












EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Intership safety communications.

Channel 9 – Communications between boats and ship-to-coast.

Channel 13 – Navigation purposes at bridges, locks, harbors.

Channel 16 - Emergency, distress and safety calls

to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.

Channel 22 – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here. Channels 68, 69, 71, 72 & 78 – Recreational boat channels.

Distress Call Procedures

- 1. Make sure radio is on.
- 2. Select Channel 16.
- 3. Press/Hold the transmit button.
- 4. Clearly say: "MAYDAY, MAYDAY, MAYDAY."
- Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
- Release transmit button.
- Wait for 10 seconds If no response Repeat MAYDAY Call.

HAVE ALL PERSONS PUT ON LIFE JACKETS !!

Mobile Phones – Call 911 for water rescue.

Coast Guard Search & Rescue – 800-418-7314/410-576-2525

> Coast Guard Crisfield – 410-968-0323 **Coast Guard Milford Haven –** 804-725-2125/3732 **St.Inigoes** – 301-872-4344/4345 Virginia Marine Police – 800-541-4646

NOAA Weather Radio – 162.400 MHz, 162.425 MHz, 162.450 MHz, 162.475 MHz, 162.500 MHz, 162.525 MHz, 162.550 MHz.

Getting and Giving Help - Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.

NOAA CHARTING PUBLICATIONS

Official NOAA Nautical Charts – NOAA surveys and charts the national and territorial waters of the U.S, including the Great Lakes, producing over 1,000 traditional nautical charts covering 3.4 million square nautical miles. Carriage of official NOAA charts is mandatory on the commercial ships that carry our commerce. They are used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters. NOAA charts are available from official chart agents listed at: www.NauticalCharts.NOAA.gov.

Official Electronic Navigational Charts® (ENCs) – ENCs are digital files of each chart's features and their attributes for use in computer-based navigation systems. ENCs comply with standards of the International Hydrographic Organization. ENCs and their updates are available for free from NOAA at: www.NauticalCharts.NOAA.gov.

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Official BookletChartsTM - BookletChartsTM are reduced scale NOAA charts printed in page-sized pieces. The "home edition" can be downloaded from NOAA for free and printed. The "professional edition", containing additional boating, safety, and educational edition is available for NOAA chart agents or over the Internet.

Official PocketChartsTM – PocketChartsTM are for beginning recreational boaters to use for planning and locating, but not for real navigation. Measuring a convenient 13" by 19", they have a 1/3 scale chart on one side, and safety, boating, and educational information on the reverse. They can be purchased at retail outlets and on the Internet.

Official U.S. Coast Pilot® – The Coast Pilots are 9 text volumes containing information important to navigators such as channel descriptions, port facilities, anchorages, bridge and cable clearances, currents, prominent features, weather, dangers, and Federal Regulations. They supplement the charts and are available from official NOAA chart agents or downloaded for free at: www.NauticalCharts.NOAA.gov.

Official Print-on-Demand Nautical Charts – These full-scale NOAA charts are updated each week by NOAA for all Notice to Mariner corrections. They have additional information added in the margin to supplement the chart. Print on Demand charts meet all federal chart carriage regulations for charts and updating. Produced under a public/private partnership between NOAA and OceanGrafix, LLC, suppliers of these premium charts are listed at www.OceanGrafix.com.

Official Chart No. 1, Nautical Chart Symbols – This reference publication depicts basic chart elements and explains nautical chart symbols and abbreviations. Download it for free at: www.NauticalCharts.NOAA.gov.

Coast Survey Navigation Managers – These ambassadors to the maritime community maintain a regional presence for NOAA and help identify the challenges facing marine transportation and boating. They are listed at http://nauticalcharts.noaa.gov/nsd/reps.htm.

